



# AMATEUR BOAT BUILDERS' ASSOCIATION

SEPT/OCT '02

## ABBA COMMITTEE

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Contact any of these four people for clarification of association activities.

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## AND NOW FOR SOMETHING COMPLETELY DIFFERENT

On the 30th July, and our second meeting in the RPYC Junior Clubhouse, we were introduced to the joys and idiosyncrasies of sailing proas. Rob Denney is a fairly recent immigrant from the eastern states and has been developing these boats on both sides of the country. For those who weren't there, a proa travels in either direction but only ever has the wind on one side. Rob has built and modified several, improving the breed as he goes. In fact, most of his proas have been modified part-way through their careers so it's difficult to say what number he's up to now.

Originally proas were developed by island peoples in the Pacific, probably several thousand years ago. These were basically open canoes with a small outrigger on one side. I don't know how well they went to windward but in common with all later proas they had to "shunt" instead of tack to change tacks. This means they had to bear away as for a gybe and when they were completely side on to the wind the rig and

steering had to be reversed before taking off in the opposite direction and pointing up into the wind (if necessary) again. Sounds clumsy, and with many traditional and/or conventional rigs, it is. Rob, however, has been working with a relatively new modification to the traditional sloop rig as used on modern yachts. Known as a ballestron rig but frequently called the AeroRig in the US and UK, and the EasyRig in Australia, I prefer to use the model world's name, Swing Rig. Whatever one calls it, the main boom extends forward of the mast and takes the tack of the jib, and the forestay, at its forward end. The jib sheets to a little cross-traveller located on this boom just ahead of the mast. The entire mast/boom arrangement is able to rotate through 360 degrees if necessary but 180 is the usual. In Rob's case he uses a couple of light shrouds to windward (the windward hull, I think) but of necessity these have to start right at the masthead. The sail is controlled by a single light sheet to the mainsail-end of the boom and I imagine a second sheet goes forward around the

rig to be used on the other tack. The sheet can be very light because the jib balances the main's pressure. (In fact, one has to be careful about jib size - too big and it will overpower the main.

With the mast in the centre of the leeward hull the rig only has to be rotated through 180 degrees (achieved by working the sheets) to shunt. The rudder problem is solved by having two, one at each end. They are balanced and fairly large because they also provide lateral resistance. They are in the leeward hull, along with the rig and controlled by very long tiller extensions. Rob has various ideas of steering with both rudders simultaneously to improve maneuverability, but admits life is simpler if he keeps the forward one locked off in the dead ahead position. Come to think of it, Tom Blackaller used a bow rudder in the America's Cup at Fremantle - I wonder what he thought of it?

Rob's not the first modern sailor to be attracted to the proa concept. Dick Newick designed one for the 1968 OSTAR race and it achieved third place. In that one the rig and steering lived on the windward hull. It had a schooner rig and must have been fairly clumsy to shunt. It led to that concept being described as an Atlantic proa, while Pacific proas have the rig on the leeward hull. It's apparently being restored in France at the moment. Later ocean racing developments became too extreme and dangerous, leading to their being banned. Crossbow, the fastest sailing vessel in the world in 1975, was a highly specialised proa. It had a very small windward hull and was not reversible in direction, being towed back to the start by power boat after each run at Weymouth. Russ Brown, the son of Californian multi-hull designer, Jim Brown, is also into proas and has cruised from Seattle to Brisbane but he's not rushing to sell plans, perhaps because inexperienced sailors may get into trouble.

Rob had several colour slides to illustrate his earlier proas, from a small 15 footer which was on a par with Lasers to "U", a large proa

designed for but not entered in the Gladstone race. This boat was lighter than a C-class catamaran. His present proa is called Harrigami, combining the name of an earlier boat with Origami because this one folds like origami, to be trailed. Since Rob hasn't yet got a purpose-designed trailer, getting the boat on and off is currently a long (3 -4 hr) exercise which probably explains why it was on a mooring in Matilda Bay at the time of the talk. Harrigami has all the accommodation in the shortish, almost dumpy looking, windward hull, leaving the longer, slender leeward hull to mind the rig and rudders. I'm sure the windward hull is clean-lined under water but she has to provide at least four fully enclosed bunks and cockpit-type seating above it.

Rob built Harrigami from strip-planked Kiri timber. Kiri is more commonly known as Pawlonia in this state. None of the local plantations are at maturity yet, so Rob's timber came from China. It's environmentally more friendly than Western Red Cedar, and is better for one's health. It's about 15% lighter and weaker than WRC but this can be allowed for in the plank thickness. Best of all, it's half the price of WRC. Since the bows (all four of them) have only to part the water, Rob has taken a real shortcut in this area, using quite large foam blocks glassed in and cleaned up. Rob wasn't too precise about the size of Harrigami but I think he said the windward hull was 5m long so the leeward one would be about 8 - 10m long. She weighs 550kg with 31 sq m of sail and can carry at least 500kg. So far she's done 16 knots in 15 knots of breeze - no slouch. The mast is home-made in carbon, fairly labour intensive but reasonably cheap. Rob described his plans to simplify construction with a planked-up carbon mast in two, telescoping pieces to allow for reefing. The construction involves vacuum bagging so this department can be regarded as fairly high-tech. He's now starting on a slightly larger but lighter proa.

All in all, it was a fascinating talk on a subject completely new to just about everyone present.

## GOOD THINGS COME IN SMALL PACKAGES

On Sunday 11th Aug we had a really different Toolbox Visit. We spectated at a regular racing day of the Emu Lakes Radio Yacht Club. Emu Lakes is a landscaped area including one largish and a couple of smaller lakes in Ballajura. The area is well served by Reid Highway and Alexander Drive so it's not hard to reach from any part of the metro area. Radio-controlled yachts are small; you pick them up; you don't get in them. That said, their operation involves all the variables of full size sailing other than actually sitting on them and getting your backside wet.

For me, a full size yachting from way back, this is a bit of a downside. You can't feel the pressure on the tiller or the wind on your cheek; all communication with the boat is purely visual and this takes some getting used to, especially if you've come out of small dinghies where feel is everything. Furthermore, if you're fifth boat in a gaggle of ten rounding the far mark your boat is going to be obscured completely at times and minor collisions become inevitable, and the rubber bow bumper gets a lot of use. Sailing at the more competitive levels a model sailor soon gets to know his rule book far more intimately than the full size feller because the same rules apply almost completely, including somebody doing a penalty whenever two boats touch. Fortunately ELRYC uses a simplified set of rules for general racing which reduces the pressure somewhat. One rule which differs from full size involves buoy room at marks. In the model world an overlap to entitle one to turning room has to be established four, not two, boat lengths before the mark - even then things can get pretty hairy.

On the day ABBA called the club was conducting handicap races for its most popular class, the International One Metre (IOM). The course is set on a selection of three or four of the club's set of nine buoys moored in the lake and is usually of the Olympic triangle, windward and return, triangle variety. Starts are off a

prerecorded tape played on a small ghetto blaster, announcing two minutes, one minute and a countdown of the remaining seconds to a scratch start. For handicap starts the tape continues counting out in ten second groups up to about 180 seconds when the boats deemed fastest take off. Each boat moves out at its predetermined start time and handicaps are adjusted mainly on an automatic system before the start of the next race.

In a good breeze races take only 10 to 15 minutes and the club can easily conduct eight races in an afternoon, including a tea break. However, for our visit, the wind continued to die all afternoon and the last race (only about the fourth) took at least half an hour with many failing to finish. We're told this is a pretty rare occurrence. All classes of radio yachts have a wide range of rigs and can handle winds from drifters up to around 20 knots, which is really gale force for models.

The IOM class which we saw is an interesting recent (the last 10 or 15 years) development, designed to keep costs down as the larger, more traditional classes skyrocketed in cost with the introduction of carbon fibre and other high-tech materials, plus computer design. The IOM is smaller than the older classes with a hull length of just one metre and high-tech materials are banned except, curiously, for fin sheathing. Commonly, hulls and decks can be conventional fibreglass, or made from thin ply or balsa (about 3mm). These latter options are usually lightly sheathed on the outside with fibreglass. Also to keep costs down, radio control is limited to two channels - one for rudder and one for a sailwinch which operates main and jib together. In the older classes extra channels are sometimes used to adjust boomvang, backstay, jib slot, etc. They marginally help performance and bump up costs significantly. In the IOM class the rigs and the hull draft and fin depth and weights are all rigidly specified, but the hull shape, apart from being restricted to monohulls, is open, making it

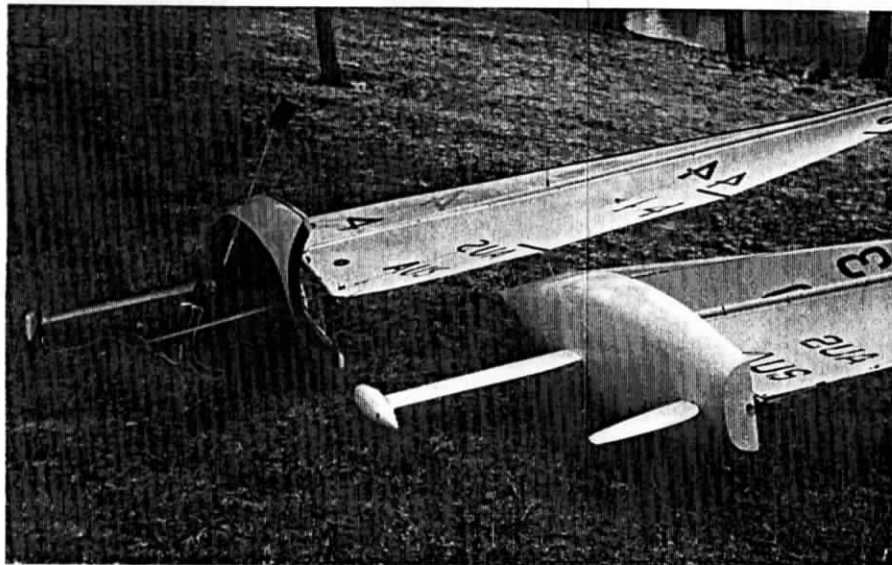
## WITH THE LITTLE BOATS AT THE LAKE



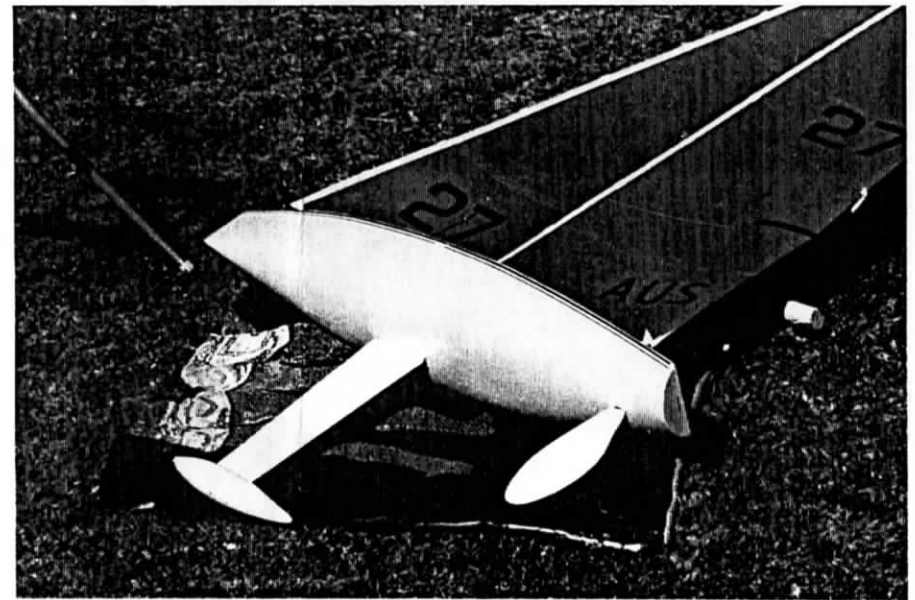
Rigging up can be done on the side, as here, or on a stand.



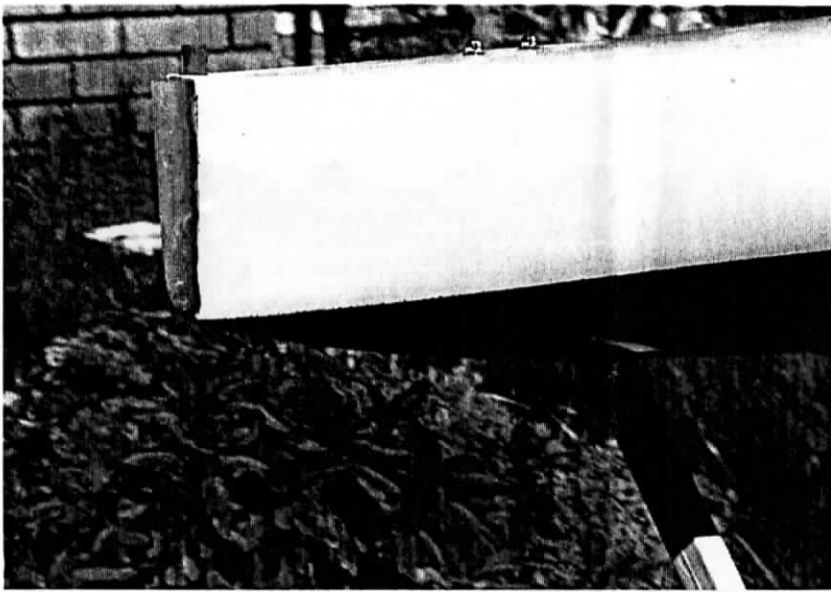
A crowded fleet approaches the windward mark, first time.



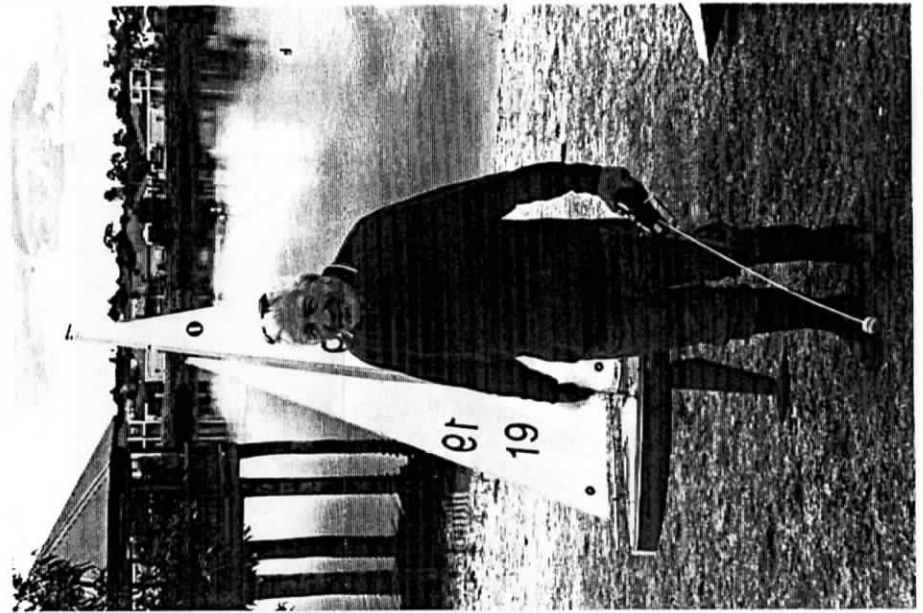
Two design concepts - narrow and wide sterns, both legal.



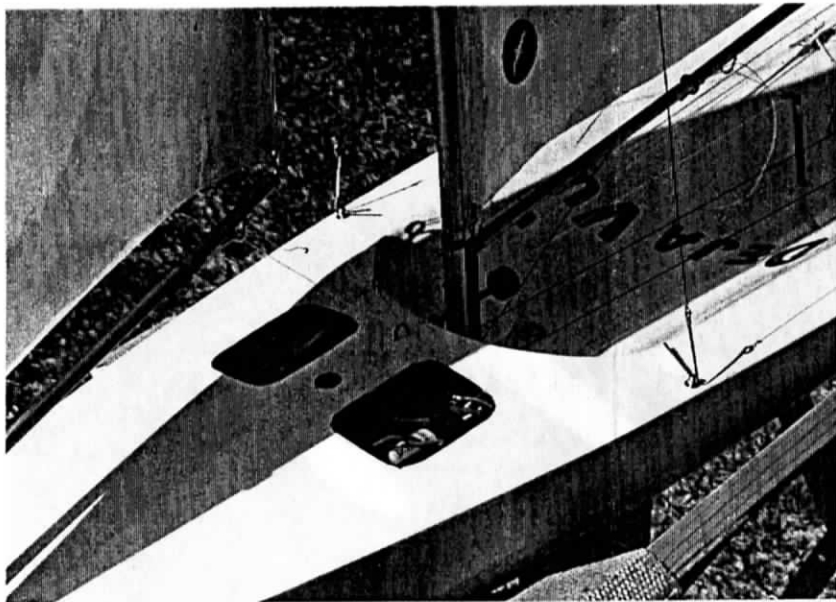
An even narrower stern. These sails are red; easy to pick.



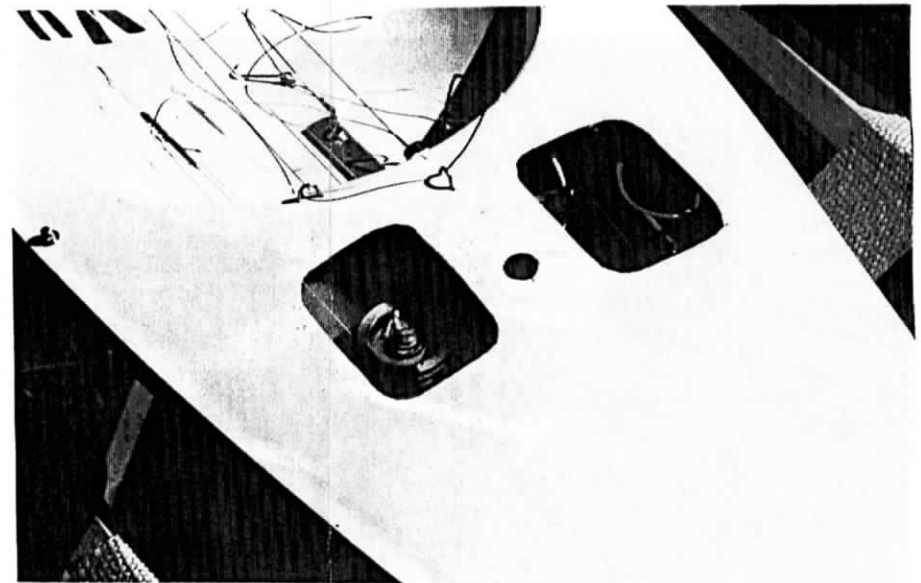
A rubber moulded bow bumper usually works overtime.



A happy model yachtie retrieves. Lifting by the mast is common - the chainplates can take it. Note bobble on aerial tip to save other competitors' eyes.



Foredeck hatches conceal the radio gear, etc in this design where a low-cut cockpit makes regular installation difficult.



Another view of foredeck hatches; the winch drum just visible in the near one. Radio and batteries in the other.

ideal for design-it-yourselfers to experiment at little cost.

The remote control system is not terribly expensive, being restricted to two channels of operation. The most common form of operation is 29Mg with crystals available for about 13 bands within that range. There's also the 27Mg range with, again, about 13 bands but this is now very old fashioned and it's hard to buy sets because they are prone to interference in the air and hence, totally unsuited for model aircraft, the biggest market. The writer uses a 29Mg set converted to 27Mg to be sure of getting a channel, but availability of 27Mg crystals may be a problem. And after all that there's 36Mg FM sets with a wide range of crystals available, but FM sets do cost more. ELRYC currently has all 29Mg channels allocated and about a dozen of 36Mg, so it's getting tight. This club is going

from strength to strength in the membership department. Sets when purchased come with two servo motors but one of these needs to be immediately replaced by a sailwinch (the other one is needed for the rudder). Winches used to be home made and still can be, but it's more common to buy one made for the job, and the one made by Rob Guyatt from South Australia is absolutely world class.

All in all, we had a fascinating visit, especially when, at the tea break, club members made their boats available for ABBA members to try their hands, a brave gesture which was very much appreciated. Our sincere thanks go to all ELRYC members who put up with our questions and who lent their boats. Who knows? It may result in a few more members on the already extensive membership roll.

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### ADMINISTRATIVE NOTES

Firstly, membership fees. Eleven people were good enough to pay these at the last evening meeting but now the crunch comes. If you were not one of the eleven then this newsletter issue contains a reminder notice. Please pay on receipt of this, posting to our treasurer, Chris Davis, at 5 Johnson St, Wembley. We need the money in promptly this year to see if we can survive our increased costs (meeting hall rent) without increasing fees. Thank you for your cooperation.

Library books to be available at the next meeting will be on design; please return any others on loan. Guest speakers and toolbox visits - the committee is running out of ideas. Any suggestions out there

### NEXT EVENING MEETING

This has slipped into October (just) to suit our guest speaker who will be designer, Mark Pivac. Mark was largely responsible for the foil design on both of Brett Burvill's foil-borne creations - his Moth dinghy and the much larger trimaran intended for the Gladstone race and built by Brett's Windrush Yachts. Brett's flat out moulding 505s for the world series at the moment but Mark knows all about it and is an amateur builder as well. Make a note: Tues, Oct 1, RPYC Junior Club.

### TOOLBOX VISIT

This has consequently slipped a little to Sat, Oct 12, and will be to the workshop of Brian Phillips at 1078 Baldivis Rd, Baldivis. Take the Freeway south to its present termination at a big roundabout with Safety Bay Rd and continue South on Baldivis Rd for about another 6km. The house is on the west of the road, but not visible. The letter box sports the number and a model of a white, gaff-rigged sailing boat. Brian has been a leading professional wooden boat builder for many years and in fact started the Wooden Boat Works before passing it on to Graham Lahiff. At his home shop he's completing a 23' gaffer and is working on a Venetian gondola replica for a Perth wedding photographer, as well as building models for the Tasker maritime museum, Mandurah. Two little provisos - no smoking in the workshop and mind the driveway, rough after winter rain.